

WHAT IS CLAIMED IS:

1. A vertical extending liquid/liquid contacting column comprising:
 - a top and a bottom, connected by walls;
 - a first liquid feed inlet, and a first liquid outlet in the top;
 - a second liquid feed inlet, and a second liquid outlet in the bottom;
 - a plurality of internal trays axially spaced from each other in the column at a tray distance, each tray comprising:
 - a plurality of perforations for the passage of a dispersed phase; and,
 - more than one downcomer or upcomer for the transport of a continuous phase, each downcomer or upcomer extending respectively below or above the tray, separated from the downcomer or upcomer of the tray above or below by a flow path length and comprising:
 - walls inclined towards each other in the flow direction of the continuous phase; and,
 - a liquid discharging end.
2. The column of claim 1, in which the downcomers or upcomers are rectangular.
3. The column of claim 2, in which the rectangular downcomers or upcomers are arranged in a staggered arrangement.

4. The column of claim 1, in which the downcomer or upcomer walls are inclined towards each such that a downcomer or upcomer wall will make a 1 to 45 degrees angle with a vertical axis of the column.

5. The column of claim 1, in which the liquid discharging end of the downcomer or upcomer further comprises a cover with respective downward or upward directed openings, and wherein said liquid discharge end of a downcomer extends between 30 and 80% of the tray distance below the tray and the liquid discharge end of an upcomer extends between 30 and 80% of the tray distance above the tray.

6. The column of claim 1, in which the flow path length is between 0.05 and 0.5 m.

7. The column of claim 1, in which the perforations on the tray are sieve openings having a diameter of between 0.004 and 0.025 m and wherein the total area of said perforations is between 2 and 20% of the cross-sectional area of the column.

8. The column of claim 1, further comprising a coalescer at the top of the column positioned between the trays and the top liquid outlet, wherein said coalescer comprises structured packing having a higher affinity to the dispersed phase than to the continuous phase.

9. The column of claim 1, wherein the column diameter is more than 2 m.

10. A method of contacting two substantially immiscible liquid mixtures having different densities and an interfacial tension of between 5-55 dyne/cm in a column comprising:

a top and a bottom, connected by walls;

a liquid feed inlet, and a liquid outlet in the top;

a liquid feed inlet, and a liquid outlet in the bottom;

a plurality of internal trays axially spaced from each other in the column at a tray distance, each tray comprising:

a plurality of perforations for the passage of a dispersed phase; and,

more than one downcomer or upcomer for the transport of a continuous phase, each downcomer or upcomer extending respectively below or above the tray, separated from the downcomer or upcomer of the tray above or below by a flow path length and comprising:

walls inclined towards each other in the flow direction of the continuous phase; and,

a liquid discharging end.

11. The method of claim 10 in which the liquids comprise furfural and a lubricating base oil resulting in the extraction of aromatics.

12. The method of claim 10 in which the liquids comprise sulfolane and a hydrocarbon stream resulting in the extraction of aromatics.

13. The method of claim 10 in which the liquids comprise phenol and water.

14. The method of claim 10 in which the liquids comprise caustic and naphtha.

15. The method of claim 10 in which the liquids comprise an acid and the product of an alkylation process.